RICCA CHEMICAL COMPANY®

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Ferroin Indicator, 0.1 Normal 1,10-Phenanthroline-Ferrous Sulfate Complex

Product Number R3140100

Other Identifying Product Numbers R3140100-500C

1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

1.3. Details of the Supplier of the Safety Data Sheet

Company Ricca Chemical Company

Address 412 West Fork Drive

Arlington, TX 76012 USA

Telephone 888-467-4222

1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA)	800-424-9300
CHEMTREC (International)	1+ 703-527-3887

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SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

Hazard Class	Category	Hazard Statements	Precautionary Statements
Hazardous to the Aquatic Environment, Short-term (Acute)	Acute 2	H401	P273,P501
Hazardous to the Aquatic Environment, Long-term (Chronic)	Chronic 2	H411	P273,P391,P501

2.2. GHS Label Elements

Pictograms:

Signal Word:

Hazard Statements:

NOTE: Hazard statements may be combined on labels to improve clarity and readability.

Hazard Number	Hazard Statement
H411	Toxic to aquatic life with long lasting effects

Precautionary Statements:

NOTE: Precautionary statements may be combined or consolidated on labels to improve clarity and readability.

Prevention

Precautionary Number	Precautionary Statement
P273	Avoid release to the environment.

Response

Precautionary Number	Precautionary Statement
P391	Collect spillage.

Disposal

Precautionary Number	Precautionary Statement
P501	Dispose of contents/container to suitable waste stream in accordance with local, state, federal, and international regulations.

2.3. Hazards not Otherwise Classified

No other hazards identified.

2.4. Ingredients of Unknown Acute Toxicity

8.3 percent of this mixture consists of ingredient(s) of unknown acute dermal and inhalation toxicity.

SECTION 3: Composition / Information on Ingredients

3.1. Components of Mixture

Chemical Name (IUPAC)	Common Name and Synonyms	CAS Number	Weight%
water	Water	7732-18-5	91.70
1,10-phenanthroline hydrate	1,10-Phenanthroline Monohydrate	5144-89-8	5.66
iron(2+) sulfate heptahydrate	Ferrous Sulfate Heptahydrate	7782-63-0	2.65

SECTION 4: First-Aid Measures

4.1. Description of Necessary Measures

Eye Contact: May cause slight irritation.

Ingestion: Dilute immediately with water or milk. Induce vomiting. Call a physician.

Inhalation: Not expected to require first aid. If necessary, remove to fresh air.

Skin Contact: May cause slight irritation.

4.2. Most Important Symptoms and Effects, Acute and Delayed

WARNING! May be harmful if swallowed. Handle with care. If ingested, dilute with water, induce vomiting, and call a physician. Wash areas of contact with plenty of water. For eyes, get medical attention. EYE CONTACT: May cause slight irritation. SKIN CONTACT: May cause slight irritation. CHRONIC EFFECTS / CARCINOGENICITY: Iron poisoning may develop indicated by pink urine discoloration. Repeated ingestion may affect the liver.

4.3. Immediate Medical Attention or Special Treatment Needed

Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops. Dilute immediately with water or milk. Induce vomiting. Call a physician.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Use any means suitable for extinguishing surrounding fire.

5.2. Specific Hazards Arising from the Substance or Mixture in a Fire

Not considered to be a fire or explosion hazard.

5.3. Special Protective Equipment and Precautions for Firefighters

Use protective clothing and breathing equipment appropriate for the surrounding fire.

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear appropriate PPE for the size and nature of the spill. As a general rule, wear safety glasses and gloves.

6.2. Cleanup and Containment Methods and Materials

Absorb with suitable material and dispose of in accordance with local regulations.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage.

SECTION 8: Exposure Controls / Personal Protection

8.1. Exposure Limits

U.S. OSHA - Permissible Exposure Limits (PEL) - Time Weighted Averages (TWA)

No limits found.

U.S. OSHA - Permissible Exposure Limits (PEL) - Ceiling Limits

No limits found.

U.S. OSHA - Permissible Exposure Limits (PEL) - Short Term Exposure Limits (STEL)

No limits found.

U.S. OSHA - Specifically Regulated Chemicals

No limits found.

ACGIH - Threshold Limit Values - Ceilings (TLV-C)

No limits found.

ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)

No limits found.

ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

Chemical Name	CAS Number	Exposure Limit
Ferrous Sulfate Heptahydrate	7782-63-0	"1 mg/m3 TWA (as Fe)" As Iron salts, soluble [RR-00521-0]

8.2. Engineering Controls

No specific controls are needed. Normal room ventilation is adequate.

8.3. Individual Protective Measures and Personal Protective Equipment

Respiratory Protection: Normal room ventilation is adequate.

Skin Protection: Chemical resistant gloves.

Eye Protection: Safety glasses or goggles.

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SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Physical State:	liquid
Color:	Dark red
Odor:	Data not available.
Odor Threshold:	Data not available.
Melting/Freezing Point:	Approximately 0°C
Boiling Point/Range:	Approximately 100°C
Flammability:	Data not available.
Flammability/Explosive Limits:	Data not available.
Flash Point:	Not flammable
Auto-Ignition Temperature:	Data not available.
Decomposition Temperature:	Data not available.
pH:	Data not available.
Kinematic Viscosity:	Data not available.
Solubility:	miscible
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	1.05
Relative Vapor Density:	Data not available.
Particle Characteristics:	Data not available.
Partition Coefficient n-octanol/water, log	Data not available.

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Alkalis, oxidizing agents.

10.4. Hazardous Decomposition Products

Will not occur.

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SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Oral acute toxicity estimate (ATE): 2238 mg/kg(calculated)

Chemical Name	CAS Number	Toxicity
1,10-Phenanthroline Monohydrate	5144-89-8	Oral LD50 Rat 132 mg/kg (Source: NZ_CCID) As 1,10-Phenanthroline [66-71-7]
Ferrous Sulfate Heptahydrate	7782-63-0	Oral LD50 Rat 1480 mg/kg (Source: Canada_WHMIS)

Acute Toxicity - Dermal Exposure:

No information found.

Acute Toxicity - Inhalation Exposure:

No information found.

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
	No data found.	

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
	No data found.	

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
	No data found.	

11.3 Additional Toxicology Information:

Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
Ferrous Sulfate Heptahydrate	7782-63-0	Freshwater Fish	Acute	"LC50 96 h Poecilia reticulata 925 mg/L [static] (IUCLID); LC50 96 h Cyprinus carpio 0.56 mg/L [semi-static] (EPA)" As Ferrous sulfate [7720-78-7]
Ferrous Sulfate Heptahydrate	7782-63-0	Water Flea	Acute	"EC50 48 h Daphnia magna 152 mg/L (IUCLID); EC50 48 h Daphnia magna 6.15 - 9.26 mg/L [Static] (EPA)" As Ferrous sulfate [7720-78-7]

12.2. Persistence and Degradability

Data not available.

12.3. Bioaccumulative Potential

Data not available.

12.4. Mobility in soil

Data not available.

12.5. Other Adverse Ecological Effects

Data not available.

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

Data not available.

SECTION 14: Transportation Information

14.1 Transportation by Land - Department of Transportation (DOT, United States of America)

Not regulated according to DOT regulations.

14.2 Transportation by Air - International Air Transport Association (IATA)

Not regulated according to IATA Dangerous Goods Regulations.

14.3 Transportation of Dangerous Goods (TDG, Canada)

Not regulated according to TDG regulations.

SECTION 15: Regulatory Information

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15.01. Occupational Safety and Health Administration (OSHA) Hazards

Chemical Name	CAS Number	Regulatory Information
		No data found.

15.02. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Chemical Name	CAS Number	RQ
		No data found.

15.03. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Chemical Name	CAS Number	Regulatory Information
Ferrous Sulfate Heptahydrate	7782-63-0	1000 lb final RQ (listed under Ferrous sulfate); 454 kg final RQ (listed under Ferrous sulfate)

15.04. Superfund Amendments and Reauthorization Act (SARA) 313 Toxics Release Inventory (TRI)

Chemical Name	CAS Number	List
		No data found.

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Ferrous Sulfate Heptahydrate	7782-63-0	Present

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Ferrous Sulfate Heptahydrate	7782-63-0	Environmental hazard (listed under Ferrous sulfate)

15.07. New Jersey Worker and Community Right-to-Know Components

Chemical Name	CAS Number	Regulatory Information
Ferrous Sulfate Heptahydrate	7782-63-0	"sn 0931" As Ferrous sulfate [7720-78-7]

15.08. California Proposition 65

Chemical Name	CAS Number	Regulatory Information
		No data found.

15.09. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Chemical Name	CAS Number	List	Status
1,10-Phenanthroline Monohydrate	5144-89-8	DSL	"Present" As 1,10-Phenanthroline [66-71-7]
Water	7732-18-5	DSL	Present
Ferrous Sulfate Heptahydrate	7782-63-0	DSL	"Present" As Ferrous sulfate [7720-78-7]

15.10. United States of America Toxic Substances Control Act (TSCA) List

Chemical Name	CAS Number	Status
1,10-Phenanthroline Monohydrate	5144-89-8	"Present (ACTIVE)" As 1,10-Phenanthroline [66-71-7]
Water	7732-18-5	Present [XU] (ACTIVE)
Ferrous Sulfate Heptahydrate	7782-63-0	"Present (ACTIVE)" As Sulfuric acid, iron(2+) salt (1:1) [7720-78-7]

15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Chemical Name	CAS Number	List	Number
1,10-Phenanthroline Monohydrate	5144-89-8	EINECS	"200-629-2" As 1,10-Phenanthroline [66-71-7]
Water	7732-18-5	EINECS	231-791-2
Ferrous Sulfate Heptahydrate	7782-63-0	EINECS	"231-753-5" As Iron sulphate [7720-78-7]

15.12. China - Inventory of Existing chemical Substances (IECSC)

Chemical Name	CAS Number	Status
1,10-Phenanthroline Monohydrate	5144-89-8	Present [38011]
Water	7732-18-5	Present [32224]
Ferrous Sulfate Heptahydrate	7782-63-0	Present [25746]

15.13. Korea - Existing Chemicals Inventory (KECI/KECL)

Chemical Name	CAS Number	List	Status
1,10-Phenanthroline Monohydrate	5144-89-8	Annex 1	"Present [KE-28205]" As 1,10-Phenanthroline [66-71-7]
Water	7732-18-5	Annex 1	Present [KE-35400]
Ferrous Sulfate Heptahydrate	7782-63-0	Annex 1	"Present [KE-21121]" As Ferrous sulfate [7720-78-7]

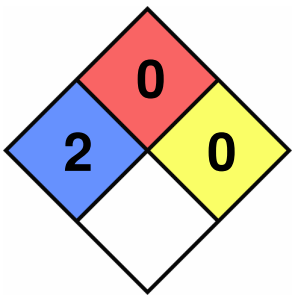
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
1,10-Phenanthroline Monohydrate	5144-89-8	(5)-3915
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)
Ferrous Sulfate Heptahydrate	7782-63-0	(1)-359

SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

Health: 2
Flammability: 0
Reactivity 0
Special Hazard:



16.2 Document Revision

Last Revision Date:
2026-05-04

DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.